Spy Robot

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Abstract: *The main Purpose for Developingthis Robot isthatitcanKeep an eye.on the activities of the some areas like Borders of Two nations , or Deep in Forests , or in places where bombs are launched or in Radioactive Rays affected areas where human intervention is Dangerous.*
This Robot has Night vision camera which can keep a watch even at night. It uses the technology of Image Processing through which it can detect Dangers. It can warn us of the Dangers before any Damages happen .It can warn us of Dangers through animals or any human carrying Weapons.
It has a Zigbee module which can Send or receive Signals.
Keywords: *Rasbperry Pi , Night Vision camera , MotorController*

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I. Introduction

In the Present Era Technology has become very Smarter .It has Made our Life very simple.

Nowadays Robotic Technology with the Combination of Artificial Intelligence have Achieved excellence in performing many Difficult Tasks very easily and also in very less time and with very high rate of Accuracy they can perform many tasks. Robots also perform multitasking for many industries with high rate of production in very less time .we use Remote controllers to control many devices like car, Television, etc. Therefore in this project we have useZigBee as to control the user friendly robot.

The design of this project encourages developing a robotic vehicle based on image processing technology with the combination of ZigBee technology for the remote operation connected with the wireless camera mounted on the robot for monitoring purpose. The robot is embedded with Raspberry pi for desired operation and is generally used for spying purposes. The distinct applications of this concept in such robot is that it can controlled from a very far range. AnZigBee receiver can detect the signals which are transmitted. The receiver can make the same information available at a remote location by establishing a communication with no wiresThere are various types of situation where a person cannot go to check or help or to take a specific action. At those points if we can use the robots then we can solve any problems or save lives. For this we have to design a system in which we can receive signals and give it to controller by decoding it so that controller can drive the robot and there must be a transmitter (ZigBee) which can send the commands to the robot. So we are designing a system in which we can send commands wirelessly by using ZigBee and that will be received by the robot system and as per the commands robot will be driven.Another feature of this Robot is that it there is no need of human control all the time. The controlling code of the Robot is developed in such a way that with help of image processing it can decide on its own its next move. For an Example, if the robot sees a Dangerous animals or any human with dangerous weapons like Gun, knife etc. it will send a warning signal at the receiver end of the ZigBee. It can also decide on its own whether the object of danger is alive or not. By seeing the subtle difference in the pixels in the image it can tell whether object before it is moving or not. If the object is a animal and it is moving it can warn at receiver end. It can also be used for rescue operation purposes where it can detect the injured person and inform the rescue team of it finding. In this way it avoids the human interaction in dangerous situation as far as possible.

II. Methodology

Block Diagram:
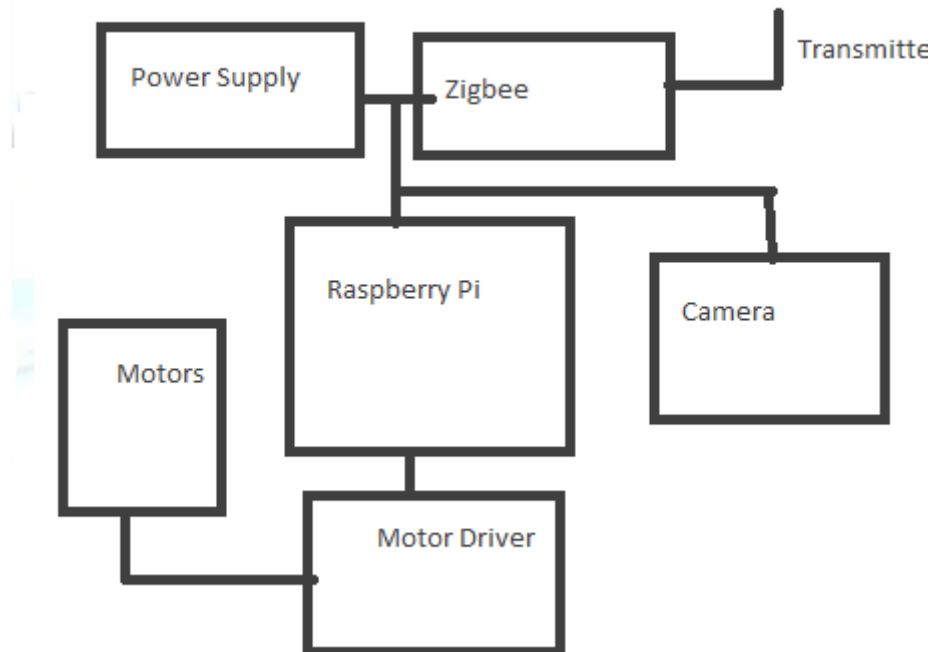
III. Working And Components

Components:
1. L293D Driver IC
2. Linear DC Motors
3. Wireless Night vision Camera (USB camera or Raspberry pi camera)
4. Raspberry Pi module
5. ZigBee Module
6. Robotic Chassis

Working:

The ROBOT used in our project runs on DC Geared motor. We are using 10 RPM motors to run the robot. And for power source we are having DC battery of12v, 4.5Amp. And a controller will drive the motors by using motor driver IC sending signal to the motor driver IC. Wireless Camera is implemented to the Robot to send video wirelessly to the transmitter side. This wireless camera will use internet to transmit the video data which will be received at the transmitter end on Laptop or mobile which uses the ZigBee Technology. The videos received by the camera will be sent to the Raspberry pi where images processing is done. The video is cut into frames and the Frames will be processed to check for suspicious activities .For image Processing we use OpenCv. There is a database used where we images are stored. The Processor will check for the similarities between the images received from the Camera to the images stored in the Database. In the Database we have images of all types of suspicious objects. If the Robot is used for Military Purposes, then the images of Guns or Arms and Ammunitions Arein the Database. We also have images of Dangerous animals like Lion , Tiger and Cheetah ,etc. if the image processed finds any suspicious objects in the image then it will send a warning signal through the ZigBee Receiver.in this way we can Control the Spy robot for Danger Detection using Image processing.

IV. Conclusion

We have Developed a Robot Which can Detect the Dangers by itself and alert us. We have used the combination of Artificial Intelligence with Robotic technology for the Spying Purposes .We also use a disguise to cover the Robot so that it cannot be identified In a particular Environment.

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